

**REMARKS**

Claims 1-29 remain in this application. In response to the Office Action, please consider the following remarks.

**Priority**

In paragraph 1 of the Office Action, it states that the priority claimed to Application No. 10/757,931 filed on January 15, 2004 entitle RFTRANSMITTER HAVING IMPROVED OUT OF BAN ATTENUATION (Priority Application) is acknowledged but does not comply with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. §120. The Office Action states that the Priority Application “fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. §112 for one or more claims of this application.” It states that that Priority Application, “discloses a configuration of a transmitter while the instant application claims a configuration of a receiver.” It states then that the Priority Application, “Fails to provide adequate support or enablement of the claimed configuration in a receiver.”

35 U.S.C. §120 states, “An application for patent for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in an application previously filed in the United States, or as provided by section 363 of this title, which is filed by an inventor or inventors named in the previously filed application shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application or on an application similarly entitled to the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application.”

To the extent that this Application discloses an invention in the manner provided by the first paragraph of 35 U.S.C. §112 in the Priority Application, Applicants object to the characterization of the Priority Application as not providing adequate support or enablement for one or more claims of the application. For example, *inter alia*, Figure 1 of this Application describes a wireless communication system as in Figure 1 of the Priority Application, and Figure 2 of this Application describes a wireless communication device which includes a receiver as described in Figure 2 of the Priority Application.

### **Claim Rejections under 35 U.S.C. §112**

The Office Action rejected claims 20 through 29 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Office Action states that

“Claims 20-29 appears to be reciting an apparatus claim of a radio frequency integrated circuit, wherein the body of the claim further recites, which appears to be a process or a method steps. Therefore, it is unclear and indefinite as to whether the applicants are attempting to recite an apparatus claim or a method claim, thus fails to particularly point out and distinctly claim the subject matter which applicant regards as the invention.”

Applicants respectfully traverse the rejection. MPEP 2173.01 states:

“A fundamental principle contained in 35 U.S.C. 112, second paragraph is that applicants are their own lexicographers. They can define in the claims what they regard as their invention essentially in whatever terms they choose so long as \*\*>any special meaning assigned to a term is clearly set forth in the specification. See MPEP § 2111.01.< Applicant may use functional language, alternative expressions, negative limitations, or any style of expression or format of claim which makes clear the boundaries of the subject matter for which protection is sought. As noted by the court in *In re Swinehart*, 439 F.2d 210, 160 USPQ 226 (CCPA 1971), a claim may not be rejected solely because of the type of language used to define the subject matter for which patent protection is sought.”

Claims 20 through 29 thus are not indefinite merely because of the use of functional language to describe the operation of an apparatus. A person of skill in the art would be apprised of the claim scope and, therefore, the claims serve the notice function required by 35 U.S.C. §112, second paragraph.

### **Claim Rejections under 35 U.S.C. §103**

In paragraph 4, the Office Action rejected claims 10 and 20 under 35 U.S.C. §103(a) as being unpatentable over Maltsev et al. US 2005/0123060 A1 (Maltsev) in view of Vanderperren et al. US 2004/0076246 A1 (Vanderperren). In paragraph 5 of the Office Action, Claims 1,9,11,19,21 and 29 were rejected under 35 U.S.C. §103(a) as being unpatentable over Maltsev et al. US 2005/0123060 A1 (Maltsev '060) in view of Vanderperren et al. US 2004/0076246 A1 (Vanderperren) and Maltsev et al. US 2004/0190560 A1 (Maltsev '560). Applicants respectfully

traverse these rejections for the following reasons. The response to the rejections shall each be addressed in the order the rejections were presented in the Office Action.

**Independent Claim 10 and Dependent Claims 11 through 19**

In paragraph 4, the Office Action rejected independent claim 10 under 35 U.S.C. §103(a) as being unpatentable over Maltsev et al. US 2005/0123060 A1 (Maltsev) in view of Vanderperren et al. US 2004/0076246 A1 (Vanderperren). Applicants respectfully traverse the rejection of independent claim 10 because these references, either alone or in combination, fail to disclose or suggest all the elements of claim 10.

First, the Maltsev ‘060 reference fails to disclose or teach the step, *inter alia*, of claim 10 of “performing a periodic pattern detection on the down converted baseband signal to produce a normalized detected periodic signal.” The Maltsev ‘060 reference does not disclose or suggest performing a periodic pattern detection on a down converted baseband signal to produce a normalized detected periodic signal. The Office Action even states that the Maltev reference fails to explicitly teach a periodic signal.

Second, the Maltsev ‘060 reference fails to disclose or suggest the step, *inter alia*, of claim 10 of, “comparing the normalized detected periodic signal with a set of thresholds.” The Office Action states that the Maltsev ‘060 reference teaches, “comparing the normalized detected signal with a set of thresholds (output of 202 is compared with thresholds 212)”. However, this statement is not accurate. The Maltsev ‘060 reference states in paragraph 21 that 202 is a Filter Bank with a plurality of matched filters 206 wherein each of the matched filters receives a different subchannel of an OFDM signal and has different coefficient spectrums matched to a corresponding one of the subchannels. As stated in paragraph 22, and shown in Figure 2, the Maltev ‘060 reference further comprises non-coherent summators 210 to sum output from a corresponding one of the matched filters 206, and threshold detectors 212 to determine when the summed output from a corresponding one of summators 210 exceeds a predetermined threshold. It also states that the non-coherent summators 210 do not preserve the magnitude and phase of the signals in summation. So only one subchannel is output from a matched filter and *a summation* from summators 210 is compared with *a predetermined threshold* for each subchannel. Thus, the Maltsev ‘060 reference teaches away from the embodiment in claim 10 of

producing a normalized detected periodic signal and also comparing the normalized detected periodic signal with a set of thresholds.

Finally, the Maltsev ‘060 reference fails to disclose or suggest the step, *inter alia*, of claim 10 of “when the normalized detected periodic signal compares favorably with the set of thresholds, indicating that the down converted baseband signal is valid.” As explained above, the Maltsev ‘060 reference teaches away from comparing a normalized detected periodic signal with a set of thresholds, and as such, it cannot disclose that the down converted baseband signal is valid when the normalized detected periodic signal compares favorably with the set of thresholds.

The Vanderperren reference fails to add to the disclosure of the Maltsev ‘060 reference to suggest the requirements of Claim 10. The Vanderperren reference relates to a timing and frequency synchronization unit as described in paragraph 52. It does not disclose or suggest how to determine when a down converted baseband signal is valid at all. Since the Maltsev reference ‘060 teaches away from the embodiment in claim 10 and the Vanderperren reference only discloses a timing and frequency synchronization unit, the combination of the Maltsev reference ‘060 and the Verderperren reference fail to suggest the requirements of claim 10.

The dependent claims 11 through 19 add further patentable matter to Claim 10 and thus are further differentiated and patentable under 35 U.S.C. §103(a) over the Maltsev ‘060 reference in view of the Vanderperren reference.

### **Independent Claim 20 and Dependent Claims 21 through 29**

In paragraph 4, the Office Action rejected independent claim 20 under 35 U.S.C. §103(a) as being unpatentable over Maltsev ‘060 reference in view of the Vanderperren reference. Applicants respectfully traverse the rejection of Independent Claim 20 because these references, either alone or in combination, fail to disclose or suggest all the elements of claim 20.

The Maltsev ‘060 reference fails to disclose, *inter alia*, the requirement of claim 20 of, “wherein the receiver section includes a signal detection module operably coupled to determine whether the inbound baseband signals are valid by: performing a periodic pattern detection on the inbound baseband signals to produce a normalized detected periodic signal; comparing the normalized detected periodic signal with a set of thresholds; and when the normalized detected

periodic signal compares favorable with the set of thresholds, indicating that the down converted baseband signals are valid.”

First, the Maltsev ‘060 reference does not disclose or suggest performing a periodic pattern detection on a down converted baseband signal to produce a normalized detected periodic signal. The Office Action even states that the Maltev reference fails to explicitly teach a periodic signal.

Second, the Maltsev ‘060 reference states in paragraph 21 that 202 is a Filter Bank with a plurality of matched filters 206, one for each of a plurality of subchannels. As stated in paragraph 22, and shown in Figure 2, the Maltev ‘060 reference further comprises non-coherent summators 210 to sum output from a corresponding one of the matched filters 206, and threshold detectors 212 to determine when the summed output from a corresponding one of summators 210 exceeds a predetermined threshold. It also states that the non-coherent summators 210 do not preserve the magnitude and phase of the signals in summation. So only one subchannel is output from a matched filter and *a summation* from summators 210 is compared with *a predetermined threshold* for each subchannel. Thus, the Maltsev ‘060 reference teaches away from the embodiment in Claim 20 of a signal detection module operably coupled to determine whether the inbound baseband signals are valid by . . . producing a normalized detected periodic signal and also comparing the normalized detected periodic signal with a set of thresholds.

Finally, as explained above, since the Maltsev ‘060 reference teaches away from comparing a normalized detected periodic signal with a set of thresholds, it can not disclose a receiver section that includes a signal detection module operably coupled to determine whether the inbound baseband signals are valid . . . when the normalized detected periodic signal compares favorable with the set of thresholds, indicating that the down converted baseband signals are valid.”

The Vanderperren reference fails to add to the disclosure of the Maltsev ‘060 reference to suggest the requirements of Claim 20. The Vanderperren reference relates to a timing and frequency synchronization unit as described in paragraph 52. It does not disclose or suggest how to determine when a down converted baseband signal is valid at all. Since the Maltsev reference ‘060 teaches away from the embodiment of Claim 20 and the Vanderperren reference only

discloses a timing and frequency synchronization unit, the combination of the Maltsev reference '060 and the Verderperren reference fail to suggest the requirements of claim 20.

The dependent claims 21 through 29 add further patentable matter to Claim 20 and thus are further differentiated and patentable under 35 U.S.C. §103(a) over the Maltsev '060 reference in view of the Vanderperren reference.

### **Independent Claim 1 and dependent Claims 2 through 9**

In paragraph 5 of the Office Action, Claims 1,9,11,19,21 and 29 were rejected under 35 U.S.C. §103(a) as being unpatentable over Maltsev '060 reference in view of the Vanderperren reference and the Maltsev '560. Applicants respectfully traverse this rejections of Independent Claim 1 because these references, either alone or in combination, fail to disclose or suggest all the elements of independent claim 1.

Independent Claim 1 states, “converting the RF signal into a down converted baseband signal; performing a normalized auto-correlation on the down converted baseband signal to produce a normalized auto-correlation signal; performing a periodic pattern detection on the down converted baseband signal to produce a normalized detected periodic signal; comparing the normalized auto-correlation value with at least one auto-correlation threshold; comparing the normalized detected periodic signal with a set of thresholds; and when at least one of the normalized auto-correlation value compares favorably with the at least one auto-correlation threshold and the normalized detected periodic signal compares favorably with the set of thresholds, indicating that the down converted baseband signal is valid.”

As explained above, the Maltsev '060 reference states in paragraph 21 that 202 is a Filter Bank with a plurality of matched filters 206 wherein each of the matched filters receives a different subchannel of an OFDM signal and has different coefficient spectrums matched to a corresponding one of the subchannels. As stated in paragraph 22, and shown in Figure 2, the Maltev '060 reference further comprises non-coherent summators 210 to sum output from a corresponding one of the matched filters 206, and threshold detectors 212 to determine when the summed output from a corresponding one of summators 210 exceeds a predetermined threshold. It also states that the non-coherent summators 210 do not preserve the magnitude and phase of the signals in summation. So only one subchannel is output from a matched filter and a

*summation* from summators 210 is compared with a *predetermined threshold* for each subchannel. Thus, the Maltsev ‘060 reference teaches away from the requirements in Claim 1, *inter alia*, of “performing a periodic pattern detection on the down converted baseband signal to produce a normalized detected periodic signal” and “comparing the normalized detected periodic signal with a set of thresholds.”

The Vanderperren reference fails to add to the disclosure of the Maltsev ‘060 reference to suggest these requirements of Claim 1. The Vanderperren reference relates to a timing and frequency synchronization unit as described in paragraph 52. It does not disclose or suggest how to determine when a down converted baseband signal is valid at all.

Furthermore, the Maltsev ‘560 reference also fails to add to the disclosures of the Maltsev ‘060 reference or the Venderperren reference. The Maltsev ‘560 reference in paragraph 28 merely indicates using Autocorrelating element 302 to preliminary detect the OFDM packet and generate initial packet detection signal 303. As stated on page 2 lines 8 through 11 of the Application, auto correlation sometimes falsely detects interfering signals or adjacent channel signals as valid signals. Thus, claim 1 requires, “when at least one of the normalized auto-correlation value compares favorably with the at least one auto-correlation threshold **and** the normalized detected periodic signal compares favorably with the set of thresholds, indicating that the down converted baseband signal is valid.” Thus, the Maltsev ‘560 reference teaches away from the present invention by only disclosing use of an Autocorrelating element 302.

The combination of the Maltsev ‘560 reference and Maltsev ‘060 reference and the Venderperm reference fail to suggest the requirements of claim 1. The Vanderperren reference relates to a timing and frequency synchronization unit as described in paragraph 52. It does not disclose or suggest how to determine when a down converted baseband signal is valid at all. Furthermore, as explained above, the Maltsev ‘060 reference teaches away from the embodiment in Claim 1 of “performing a periodic pattern detection on the down converted baseband signal to produce a normalized detected periodic signal” and “comparing the normalized detected periodic signal with a set of thresholds.” And neither Maltsev reference teaches or suggests using **both** a normalized auto-correlation value that compares favorably with the at least one auto-correlation threshold **and** a normalized detected periodic signal that compares favorably with the set of thresholds, indicating that the down converted baseband signal is valid, as required by claim 1.

The dependent claims 2 through 9 add further patentable matter to Claim 1 and thus are further differentiated and patentable under 35 U.S.C. §103(a) over the Maltsev '060 reference in view of the Vanderperren reference and the Maltsev '560 reference.

**Conclusion**

For the above reasons, the foregoing response places the Application in condition for allowance. Therefore, it is respectfully requested that the rejection of the claims be withdrawn and full allowance granted. Should the Examiner have any further comments or suggestions, please contact Jessica Smith at (972) 240-5324.

Respectfully submitted,  
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